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Applicant Initiated Interview Request Form

Application No.: 10/580,929 First Named Applicant: Hideo Nagai
Examiner: Rao, Shrinivas H. Art Unit: 2814 Status of Application: Final OA

Tentative Participants:
(1) Shrinivas (Steven) H. Rao (2)Edward Lin

(3)_____ (4)_____

Proposed Date of Interview: 6/25 or 6/26, 2009 **Proposed Time:** Earliest convenience (AM/PM)

Type of Interview Requested:
(1) [×] Telephonic (2) [ ] Personal (3) [ ] Video Conference

Exhibit To Be Shown or Demonstrated: [ ] YES [×] NO
If yes, provide brief description: _____

Issues To Be Discussed

Issues (Rej., Obj., etc.)	Claims / Fig. #s	Prior Art	Discussed	Agreed	Not Agreed
(1) Rej.	1, 27	Durocher	[ ]	[ ]	[ ]
(2)			[ ]	[ ]	[ ]
(3)			[ ]	[ ]	[ ]
(4)			[ ]	[ ]	[ ]

[ ] Continuation Sheet Attached

Brief Description of Arguments to be Presented:
Please see attached DRAFT response.

An interview was conducted on the above-identified application on _____.

NOTE: This form should be completed by applicant and submitted to the examiner in advance of the interview (see MPEP § 713.01).
This application will not be delayed from issue because of applicant's failure to submit a written record of this interview. Therefore, applicant is advised to file a statement of the substance of this interview (37 CFR 1.133(b)) as soon as possible.

Applicant / Applicant's Representative Signature

Edward Y. Lin
Typed/Printed Name of Applicant or Representative

58,567
Registration Number, if applicable

Examiner / SPE Signature

RESPONSE UNDER 37 CFR SECTION 1.116
EXPEDITED PROCEDURE - GROUP 2814

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	Examiner: Rao, Shrinivas H.
Hideo Nagai	Art Unit: 2814
Serial No.: 10/580,929	Confirmation No. 9240
Filed: May 30, 2006	**DRAFT**
For: SEMICONDUCTOR LIGHT EMITTING DEVICE, LIGHTING MODULE, LIGHTING APPARATUS, DISPLAY ELEMENT, AND MANUFACTURING METHOD FOR SEMICONDUCTOR LIGHT EMITTING DEVICE	June 24, 2009 Costa Mesa, California 92626

RULE 116 RESPONSE TO OFFICE ACTION

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sirs:

In response to the Final Office Action dated April 28, 2009, please consider the following.

IN THE CLAIMS:

1. (Previously Presented) A semiconductor light emitting device comprising:

a substrate;

a semiconductor multilayer structure formed on one of a plurality of main surfaces of the substrate, the semiconductor multilayer structure including a light emitting layer;

a first electrode and a second electrode formed on the semiconductor multilayer structure, power being supplied to the semiconductor multilayer structure through the first electrode and the second electrode causing the light emitting layer to emit light; and

a phosphor film covering at least a main surface of the semiconductor multilayer structure which faces away from the substrate, wherein

the semiconductor multilayer structure is divided into a plurality of portions by a division groove, and each of the plurality of portions is an independent light emitting element,

each of a plurality of light emitting elements have a diode structure, and includes an anode electrode and a cathode electrode, and an insulating film is formed on a side surface of each of the plurality of light emitting elements,

the plurality of light emitting elements are connected in series such that a cathode electrode of a light emitting element is connected to an anode electrode of a different light emitting element using a wire formed by a thin metal film formed on the insulating film, and

one of an anode electrode of one of the plurality of light emitting elements at a higher potential end of an array of the plurality of light emitting elements is the first electrode, and one of a cathode electrode of one of the plurality of light emitting elements at a lower potential end of the array of the plurality of light emitting elements is the second electrode.

2. (Previously Presented) The semiconductor light emitting device of Claim 1, wherein

the semiconductor multilayer structure includes a light reflective layer between the light emitting layer and the one of the plurality of main surface of the substrate.

3. (Currently Amended) The semiconductor light emitting device of Claim 1, wherein

[[the]] the division groove is deep enough to reach the substrate.

4. (Previously Presented) The semiconductor light emitting device of Claim 1 further comprising:

a first terminal and a second terminal formed on another one of the plurality of main surfaces of the substrate;

a first conductive member electrically connecting the first electrode to the first terminal; and

a second conductive member electrically connecting the second electrode to the second terminal.

5. (Previously Presented) The semiconductor light emitting device of Claim 4, wherein

at least a part of each of the first conductive member and the second conductive

member is a plated-through hole provided in the substrate.

6. (Previously Presented) The semiconductor light emitting device of Claim 5, wherein

each of the plated-through holes is located at a different corner of the substrate.

7. (Previously Presented) The semiconductor light emitting device of Claim 6, wherein

the plurality of light emitting elements are formed on locations aside from locations of the plated-through holes.

8-13. (Cancelled)

14. (Previously Presented) The semiconductor light emitting device of Claim 4, wherein

at least part of each of the first conductive member and the second conductive member is a conductive film formed on a side surface of the substrate.

15. (Previously Presented) The semiconductor light emitting device of Claim 1, wherein

the substrate is highly resistant.

16. (Previously Presented) The semiconductor light emitting device of Claim 1, wherein

the semiconductor multilayer structure has a structure of epitaxial growth on the substrate.

17. (Previously Presented) The semiconductor light emitting device of Claim 1, wherein

the semiconductor multilayer structure is a semiconductor multilayer structure that has been epitaxially grown on a single-crystal substrate different from the substrate and transferred to the substrate.

18. (Previously Presented) The semiconductor light emitting device of Claim 1 wherein the anode electrode for each of the plurality of light emitting elements includes a transparent electrode.

19. (Previously Presented) The semiconductor light emitting device of Claim 2 wherein the light reflective layer is a distributed Bragg reflector layer.

20. (Previously Presented) A lighting module comprising:

a mounting substrate; and

a semiconductor light emitting device defined in Claim 1 mounted on the mounting substrate.

21. (Previously Presented) The lighting module of Claim 20, wherein

the mounting substrate has a depression which includes a reflective film on a wall thereof, and

the semiconductor light emitting device is mounted on a bottom of the depression.

22. (Previously Presented) A lighting apparatus including a lighting module defined in Claim 20 as a light source.

23. (Previously Presented) A display element including a semiconductor light emitting device defined in Claim 1 as a light source.

24. (Previously Presented) A manufacturing method for a semiconductor light emitting device, comprising the steps of:

forming a semiconductor multilayer structure including a light emitting layer on one of a plurality of main surfaces of a substrate;

dividing the semiconductor multilayer structure into a plurality of portions each of which corresponds to a semiconductor light emitting device;

forming a phosphor film on and around each of the plurality of portions of the semiconductor multilayer structure; and

dividing the substrate for each of the plurality of portions of the semiconductor multilayer structure.

25. (Previously Presented) The method of Claim 24 further comprising the step of:

varying a percentage of phosphor in the phosphor film to vary a color temperature of a white light emitted by the semiconductor light emitting device.

26. (Previously Presented) The method of Claim 24 further comprising the step of:

varying a thickness of the phosphor film to vary a color temperature of a white light emitted by the semiconductor light emitting device.

27. (New) An array of a plurality of light emitting elements formed on a substrate, wherein

the light emitting elements are covered with a phosphor layer,

a first light emitting element included in the light emitting elements is formed by laminating a first conductive layer to which a first electrode is connected, a light emitting layer, and a second conductive layer to which a second electrode is connected, on the substrate in this order,

a second light emitting element included in the light emitting elements is formed by laminating a first conductive layer to which a first electrode is connected, a light emitting layer, and a second conductive layer to which a second electrode is connected, on the substrate in this order, the second light emitting element being adjacent to the first light emitting element,

the first electrode included in the first light emitting element is electrically connected to the second electrode included in the second light emitting element by a metal film, and

the first and the second light emitting elements are separated from each other by a groove.

REMARKS

In the present invention, the lighting elements are connected to each other in series using a wire that is formed by a thin metal film.

However, the lighting elements 59 of *Durocher* are not electrically connected to each other in series, as shown in FIG. 9 of *Durocher*. Each of the light emitting elements 549 emits light via power supplied by a feed through electrode 37 and conductive interconnect patterns 47 and 49, which are provided for each of the light emitting elements 59. Thus, the light emitting elements 59 are not connected in series, since nothing electrically connects adjacent conductive interconnect patterns 47.

Furthermore, the light emitting elements (LED chips) 1 in FIG. 1 of *Durocher* are not electrically connected to each other in series. Each of the LED chips 1 emit light via power supplied by a cathode lead 3 and an anode lead 5, which are provided for each of the LED chips 1. In FIG. 1, tapered interior sidewalls 15 bridged between each adjacent cathode lead 3 and anode lead 5 reflects light emitted from the LED chip 1. (¶ 0004) LED Chip 1 is not electrically conductive and does not electrically connect each of the LED chips 1 to each other serially. If the tapered interior side wall 15 is electrically conductive, it is only necessary to provide a cathode lead 3 for an LED chip at one end of the array and an anode lead 5 for an LED chip at the other end of the array. However, as shown in FIG. 1, a pair of a cathode lead 3 and an anode lead 5 is provide for each of the LED chips.

In FIG. 1, power is supplied to the LED chip through lead wire 7, which is not formed by a thin metal film.

In addition, in the present invention, a phosphor film covers a semiconductor multilayer structure, and thus covers all the light emitting elements.

However, in *Durocher*, the phosphor film 65 is separately provided for each of the light emitting elements 59.

It is now believed the present application is in condition for allowance and an early notification of the same is requested.

If there are any questions with regards to this matter the undersigned attorney can be contacted at the below listed telephone number.

Very truly yours,

SNELL & WILMER L.L.P.

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